

CLAIMS

What is claimed is:

1. A guitar processing circuit, comprising:

a guitar converter circuit adapted to receive a predetermined number of analog string signals representative of string vibrations of guitar strings mounted on a guitar when the guitar strings are strummed and to generate a predetermined number of digital string signals based on the analog string signals; and

a guitar formatting circuit in communication with the guitar converter circuit, the guitar formatting circuit adapted to format the digital string signals generated by the guitar converter circuit to be compatible with a predetermined number of digital communication protocols and to output the formatted digital string signals.

2. The guitar processing circuit of claim 1, wherein the guitar formatting circuit is adapted to format the digital string signals to be compatible with a single digital communication protocol.

3. The guitar processing circuit of claim 1, wherein the guitar formatting circuit is adapted to format the digital string signals to be compatible with a MaGIC digital communication protocol.

4. The guitar processing circuit of claim 1, wherein the guitar formatting circuit is adapted to format the digital string signals to be compatible with multiple different digital communication protocols.

5. The guitar processing circuit of claim 1, wherein the guitar formatting circuit is adapted to format the digital string signals to be compatible with a MaGIC digital communication protocol and a Musical Instrument Digital Interface digital communication protocol.

6. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is further adapted to receive a predetermined number of external analog signals and to generate a predetermined number of external digital signals based on the external analog signals; and

the guitar formatting circuit is further adapted to format the external digital signals to be compatible with the predetermined number of digital communication protocols and to output the formatted external digital signals.

7. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is further adapted to receive an analog microphone signal and to generate a digital microphone signal based on the analog microphone signal; and

the guitar formatting circuit is further adapted to format the digital microphone signal to be compatible with the predetermined number of digital communication protocols and to output the formatted digital microphone signal.

8. The guitar processing circuit of claim 1, wherein the guitar converter circuit is further adapted to output one or more of the predetermined number of analog string signals.

9. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is further adapted to receive a predetermined number of external digital signals, to generate a predetermined number of external analog signals based on the external digital signals, and to output the external analog signals.

10. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is further adapted to receive a predetermined number of analog control signals and to generate a predetermined number of digital control signals based on the analog control signals; and

the guitar formatting circuit is further adapted to format the digital control signals to be compatible with the predetermined number of digital communication protocols and to output the formatted digital control signals.

11. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is further adapted to receive a predetermined number of analog noise signals representative of noise in one or more of the predetermined number of analog string signals and to generate the predetermined number of digital string signals based on the analog noise and string signals.

12. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive a single analog string signal when one or more guitar strings are strummed and to convert the single analog string signal into a single digital string signal; and

the guitar formatting circuit is adapted to format the single digital string signal to be compatible with the predetermined number of digital communication protocols and to output the single digital string signal.

13. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive a separate analog string signal for each guitar string that is strummed and to convert the separate analog string signals into separate digital string signals; and

the guitar formatting circuit is adapted to format the separate digital string signals to be compatible with the predetermined number of digital communication protocols and output the separate digital string signals.

14. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive a separate analog string signal for each guitar string that is strummed, to process the separate analog string signals to generate a predetermined number of processed analog string signals, and to convert the processed analog string signals into processed digital string signals, and

the guitar formatting circuit is adapted to format the processed digital string signals to be compatible with the predetermined number of digital communication protocols and output the processed digital string signals.

15. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive a separate analog string signal for each guitar string that is strummed, to convert the separate analog string signals into separate digital string signals, and to process the separate digital string signals to generate a predetermined number of processed digital string signals, and

the guitar formatting circuit is adapted to format the processed digital string signals to be compatible with the predetermined number of digital communication protocols and to output the processed digital string signals.

16. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive a separate analog string signal for each guitar string that is strummed, to combine the separate analog string signals to generate a single analog string signal, and to convert the single analog string signal into a single digital string signal, and

the guitar formatting circuit is adapted to format the single digital string signal to be compatible with the predetermined number of digital communication protocols and to output the single digital string signal.

17. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive a separate analog string signal for each guitar string that is strummed, to combine two or more of the separate analog string signals to generate a predetermined number of combined analog string signals, and to convert the combined analog string signals into a combined digital string signals, and

the guitar formatting circuit is adapted to format the combined digital string signals to be compatible with the predetermined number of digital communication protocols and to output the combined digital string signals.

18. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive two or more separate analog string signals for each guitar string that is strummed and to convert the separate analog string signals for each guitar string into separate digital string signals for each guitar string; and

the guitar formatting circuit is adapted to format the separate digital string signals to be compatible with the predetermined number of digital communication protocols and to output the separate digital string signals for each guitar string.

19. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive two or more separate analog string signals for each guitar string that is strummed and to convert the separate analog string signals for each guitar string into a single combined digital string signal for each guitar string; and

the guitar formatting circuit is adapted to format the single combined digital string signal for each string to be compatible with the predetermined number of

digital communication protocols and to output the single combined digital string signal for each guitar string.

20. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive two or more separate analog string signals for each guitar string that is strummed, to generate an analog x-plane string signal and an analog y-plane string signal for each guitar string based on the separate analog string signals for each guitar string, and to convert the analog x-plane and y-plane string signals for each guitar string into digital x-plane and y-plane string signals for each guitar string; and

the guitar formatting circuit is adapted to format the digital x-plane and y-plane string signals for each string to be compatible with the predetermined number of digital communication protocols and to output the digital x-plane and y-plane string signals for each guitar string.

21. The guitar processing circuit of claim 1, wherein:

the guitar converter circuit is adapted to receive two or more separate analog string signals for each guitar string that is strummed and to generate an analog x-plane string signal and an analog y-plane string signal for each guitar string based on the separate analog string signals for each guitar string,

to combine the analog x-plane and y-plane string signals for each guitar string to generate a single combined string signal for each guitar string and convert the single combined string signal for each guitar string into a single digital combined string signal for each guitar string, and

the guitar formatting circuit is adapted to format the single combined string signal for each string to be compatible with the predetermined number of digital communication protocols and to output the single combined string signal for each guitar string.